Project Final Report

APEC Climate Symposium 2025

Addressing APEC's Climate Challenges: Complexity of Climate Change Adaptation and the Way Forward

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APEC Policy Partnership on Science, Technology and Innovation

April 2026

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Economic Cooperation

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Executive Summary

The APEC Climate Symposium 2025 (APCS 2025) was held in Busan, Republic of Korea, from 7 – 9 August 2025. The Symposium was co-hosted by the APEC Climate Center (APCC), the Korea Meteorological Administration (KMA), and Busan Metropolitan City, and the event commemorated the 20th anniversary of APCC.

The Symposioum convened 186 participants from 26 economies, including 18 APEC member economies and 9 non-member economies. Attendees included representatives from Meteorological and Hydrological Services (NMHSs) of member economies, government officials, academia, international organizations, and the private sector. The primary theme, “Addressing APEC’s Climate Challenges: Complexity of Climate Change Adaptation and the Way Forward,” facilitated discussions on the recent advancement of climate prediction and attribution research. APEC Knowledge Sharing Session served as a platform to share best practices of APEC member economies utilizing climate information services in climate change adaptation.

The event featured a keynote session, two technical sessions on covering attribution, prediction, and adaptation and a panel discussion. Key outcomes included the sharing of advanced climate modeling techniques, the exploration of Event Attribution (EA) methodoloiges, and the discussion of cross-sectoral adaptation strategies involving health, agriculture, and finance. Participants emphasized the need for integrated knowledge systems and strengthened regional cooperation to enhance climate resilience across the Asia-Pacific.

Introduction

The Asia-Pacific region remains one of the most vulnerable areas to climate change impacts, facing intensifying extreme weather events. While addressing climate change is a shared mission, responses have often been fragmented across diverse channels. 2025 marks the 20th anniversary of APCC, serving as a pivotal moment to reflect on past achievements and chart a future path.

This project aligns with APEC's Putrajaya Vision 2040 and the Aotearoa Plan of Action, particularly Driver 3 (Strong, Balanced, Secure, sustainable and Inclusive Growth). By addressing the complexity of climate adaptation, the project supports the regions' goal of tackling environmental challenges and natural disasters through science and technology.

The primary objectives of the APEC Climate Symposium 2025 were to:

- Increase awareness of the complexity of climate change adaptation and its sectoral interconnections including water, agriculture, and health
- Facilitate knowledge exchange on best practices for managing extreme climate events and bridging the gap between climate science and policy
- Identify future directions for regional cooperation to enhance climate resilience in the APEC region.

The Symposium aimed to bring together diverse stakeholders ranging from scientists, policy-makers, and practitioners, to share advancements in climate prediction and attribution research, and to discuss practical adaptation strategies that can be implemented across member economies.

Symposium summary

Keynote Session. Understanding Climate Change and its Challenges: Scientific and Societal perspectives

◆ **[Keynote Speaker] Understanding Climate Change and its Challenges (Sir. Dr. Jim Skea, Chair of Intergovernmnetal Panel on Climate Change(IPCC))**

- The IPCC is an intergovernmental body under the United Nations (UN) that comprehensively assesses scientific, technical, and socio-economic information related to climate change. It does not conduct research directly but synthesizes existing literature while maintaining policy neutrality. It operates through three Working Groups (Physical Science; Impacts, and Adaptation and Vulnerability; Mitigation) and a Task Force on Domestic Greenhouse Gas Inventories.
- It scientifically proves that human activities are the unequivocal cause of global warming. Widespread and rapid changes are already occurring in the atmosphere, ocean, and biosphere. Extreme climate events such as heatwaves, heavy rains, droughts, and wildfires are frequent in all regions, severely affecting humanity and ecosystems. The issue of inequality was raised, noting that climate-vulnerable economies suffer extreme damage despite having low contributions to emissions
- Risks to land and ecosystems could escalate rapidly if the global average temperature rises by 1.5~2℃. Serious threats are expected in health (heat and humidity), food (maize, fisheries, etc.) and human living conditions
- Current adaptation efforts face limitations as they are often small-scale, fragmented, and short-term, lacking a long-term perspective. While active adaptation can mitigate risks, physical and institutional limits make it impossible to eliminate all risks.
- The cycle for the 7th Assessment Report (AR) began in 2023, with the report scheduled for release in 2029. The drafting process is placing greater weight on social aspects, including adaptation, health, poverty, migration, and finance, than in previous cycles

◆ **[Keynote Speaker] Next Generation Earth System Model Projections (Dr. Axel Timmermann, Director, IBS Center for Climate Physics)**

- The IBS Center for Climate Physics (ICCP) at Pusan University was established in 2017. Based on the supercomputer ‘Aleph’ and an isotope geochemistry lab, it conducts researches on past and future climates with about 60 researchers from 12 economies. Its goal is to understand natural climate variability and anthropogenic climate change and improve simulations of glaciers, sea-levels, and regional climate processes.
- Existing climate models struggle to accurately represent regional-scale climate change and extreme events on the Korean Peninsula. ICCP utilizes 9km and 4im global high-resolution models to precisely reproduce regional climate phenomena such as clouds, precipitation, and typhoons, These models contribute to practical impact assessments by overcoming the limitations of Coupled Model Intercomparision Project Phase 6 (CMIP6), enabling precise simulation of monsoon systems and typhoon intensity and structure.

- Current models have limitations in dealing with elements like vegetation, carbon cycles, and marine as well as terrestrial ecosystems with sufficient precision or maturity. Future modeling needs to include ice sheets, sea-level rise, carbonate dissolution processes, and vegetation models including insects and algae, as well as urban environment modeling.
- ICCP aims to develop a fully integrated model, covering the atmosphere, ocean, coast, and glaciers. It also considers establishing an Climate Service Hub in cooperation with centers like the APEC Climate Center (APCC) to apply climate information to various sectors such as agriculture, cities, ecosystems, and energy.

Session I. Climate Challenge: Attribution and Prediction Efforts, Achievements, and Directions

◆ **The Need to Account for Model Error for Prediction, Projection, and Attribution (Dr. Doug Smith, Research Fellow, Hadley Center, Met Office, UK)**

- Existing climate models are not perfect; they can produce different or even opposite results under the same conditions. Believing results without accounting for model error may fail to reflect actual climate change accurately.
- If models underestimate actual climate responses, the impacts of climate change may also be underestimated, leaving society unprepared for future extreme climate events (heatwaves, heavy rain, droughts).
- Even if decadal predictions are somewhat accurate, the signal is too weak. Therefore, a large number of ensembles are needed to extract predictable signals, and these signals must be boosted. This issue applies equally to long-term North Atlantic Oscillation (NAO) prediction.
- Model differences and errors must be reflected to properly identify NAO variability driven by external factors. Accepting model results at face value leads to missing these signals, emphasizing that it is nearly impossible for models to reproduce a perfect Signal-to-Noise ratio (S/N) initially.

◆ **The Tropical Pacific as Key to Global Climate Variability and Change (Prof. Yu Kosaka, Associate Professor, Research Center for Advanced Science and Technology, University of Tokyo, Japan)**

- The Tropical Pacific is a key region for global climate variability and the origin of El Niño and La Niña (ENSO). ENSO significantly impacts global climate elements like SST, precipitation, wind, sea levels, and tropical cyclones.
- While a "La Niña-like" trend has been observed in recent decades, climate models predict an "El Niño-like" trend, creating a discrepancy. Consequently, there is high uncertainty regarding whether the future climate will be El Niño-like or La Niña-like. The IPCC AR6 report also assesses that models fail to reproduce the observed strengthening of the Walker Circulation (La Niña-like).
- The warming pattern of the Tropical Pacific determines precipitation, sea levels, the North Pacific jet stream, and storm tracks. This region is essentially the epicenter of global climate change uncertainty.
- Future projections related to ENSO have low reliability. More attribution research and model improvements are needed, and this uncertainty must be considered when establishing climate change policies and adaptation plans.

◆ **Towards Attribution of Extreme Rainfall Events Using Convection-Permitting Simulations (Prof. Seung-Ki Min, Professor, Division of Environmental Science & Engineering, POSTECH)**

- Joint research on the role of anthropogenic factors in the intensity and extreme precipitation of typhoons affecting the Korean Peninsula. With typhoon tracks moving northward and frequency increasing in September (e.g., 7 typhoons in 2019), there is a potential for major natural disasters. The study analyzed how much global warming (anthropogenic factors) contributed to these changes.

- The research analyzed 4 typhoons that made landfall on the Korean Peninsula over the last 10 years (2011–2023) using a high-resolution regional model (3km grid). Two simulations were conducted: one with actual conditions (natural + anthropogenic) and one with anthropogenic warming effects removed, to estimate human influence. Uncertainties in warming patterns were addressed using ensemble simulations with 5 SST warming patterns.

- The simulation of typhoon intensity confirmed increases in maximum wind speed and decreases in central pressure, verifying that anthropogenic factors contributed to typhoon intensification. Strong updrafts and increased moisture in the typhoon center induced extreme precipitation. The probability of 6-hour accumulated rainfall exceeding 150mm was higher in actual conditions, estimating an approximate 16–37% increase in extreme rainfall due to anthropogenic warming.

- As this is a single-model study, uncertainties exist (model bias, lack of track change reflection), necessitating future multi-model, long-term research.

◆ **Advancements in diverse Event Attribution Techniques and their Engagement with Society (Prof. Yukiko Imada, Associate Professor, Division of Climate System Research, University of Tokyo)**

- With global average temperatures nearing the 1.5℃ target, social damages like increased heatwaves and heatstroke patients are visible in Japan. However, extreme weather events like heatwaves and heavy rain act together with natural variability (e.g., strong high pressure, ENSO), making it difficult to explain them solely by global warming. Scientific evidence is needed to explain how much is attributable to global warming, known as "Event Attribution" research.

- Event Attribution methodologies are Approaches include probabilistic, magnitude-based, statistical, and conditional/prediction-based attribution.

- Research confirmed that warming significantly increased the probability of recent heatwaves in Japan. For heavy rain, while the contribution is smaller than for heatwaves, warming increases its frequency and intensity. Japan launched the "Weather Attribution Center Japan (WAC Japan)" in 2024 to announce attribution results shortly after extreme events, expanding application to government flood measures, agriculture/health policies, and insurance.

- While event attribution provides scientific evidence supporting climate policies, guidelines and an integrated framework are needed to prevent confusion due to diverse methodologies.

◆ **Physical Climate Storylines as a way of Bridging between Attribution and Prediction (Prof. Ted Shepherd, Grandtham Professor of Climate Science, Department of Meteorology, University of Reading, UK)**

- While long-term regional warming is certain, regional predictions have high uncertainty due to model differences and natural variability. Traditional multi-model means mix different results, causing signals (forcing) to disappear, which limits their meaningfulness at the regional level. Observed trends increasingly fall outside model ranges, necessitating the reflection of conditions and context rather than simple averages.

- He Introduced "Conditional Attribution" (analyzing climate change impacts under specific internal conditions like SST patterns or atmospheric circulation) and the "Storyline Approach" (tracing cause-and-effect relationships by setting physically plausible "scenarios").

- The critical question in climate crisis response is not "Exactly what will happen?" but "What impact will specific actions have under uncertain conditions?" Scientists should express various possibilities conditionally to help policymakers make decisions amidst uncertainty.

Session II. Climate Challenge: Adaptation and Cooperation for Strengthening Climate Resilience

◆ **Health in All Policies (HiAP) for Climate Action (Ho Kim, Professor, Graduate School of Public Health, SNU, Korea)**

- He introduced health concepts within the context of climate change using WHO frameworks (Health risk = Climate hazard + Vulnerability + Exposure) and CDC frameworks (Climate change → Environmental change → Health damages like malaria, heat death, CVD).

- He also proposed by WHO, HiAP posits that since all policies affect health, health must be considered at the policy formulation stage (e.g., solving air pollution requires cooperation across energy, industry, housing sectors).

- Health is influenced by social/environmental factors (income, education, housing) beyond biological ones. Policies can adjust these factors. Emphasized the distinction between equality and equity; differential policies are needed for equitable outcomes. Health inequality accumulates over the life course, requiring a life-cycle approach to climate policy.

- A key element of HiAP is "co-benefits" (e.g., using public transport reduces emissions and improves cardiovascular health). Shared studies on heat/urbanization: Japan shows higher heat death risk with urbanization, while China shows higher risk in rural areas. Korea shows high risk in both, with medical infrastructure playing a key mitigation role. Emphasized the importance of urban green spaces (lower suicide risk during heatwaves) and noted that concurrent day/night heatwaves pose significantly higher risks .

- **Global Pre-harvesting Crop Yield Forecasting for Climate-resilient Agri-food Systems (Toshichika Iizumi, Principal Scientist, Institute for Agro-Environmental Sciences, Agriculture and Food Research Organization of Japan)**
  - Climate change has slowed the growth rate of global agricultural productivity (e.g., wheat, rice). While high-latitude regions saw productivity gains from warming, low-latitude regions saw clear decreases.
  - Adaptation measures include adjusting planting dates, managing inputs (fertilizer/water), introducing heat/drought-tolerant varieties, and crop switching. Non-agricultural measures like insurance are also being pursued. However, adaptation effects are limited as temperatures rise, leading to unavoidable residual damage .
  - Yield variability is expanding with rising temperatures, worsening stability. Introduced the "APCC-NARO Joint Crop Forecasting" system utilizing multi-model predictions, which allows yield prediction 3–6 months before harvest. Emphasized that while mitigation is crucial, strengthening resilience to production shocks through crop/climate forecasting is vital in the short term .

- **Navigating the Climate Crisis: Understanding Coupled Earth-Human Systems (Hyungjun Kim, Professor, Moon Soul Graduate School of Future Strategies, KAIST, Korea)**
  - Climate change is not just a natural phenomenon but a result of human activity (Energy production → CO2 → Warming → Disaster), creating a vicious cycle. Mitigation and Adaptation are complementary but require optimization due to limited resources.
  - IPCC AR6 states human influence on warming is unequivocal. Satellite observations and "Meta-Earth" simulations prove human footprints are distinct from natural systems, and Probability Density Function (PDF) shifts show increased probability and intensity of extreme events.
  - Climate impacts involve intertwined water, food, and energy systems, making single-sector approaches difficult. Constraints in one (e.g., cooling water shortage) lead to socio-economic damage. Adaptation is complex and requires a comprehensive approach integrating socio-economic scenarios, emission scenarios, Earth system models, and impact models.

- **From Projection to Action: Integrating Climate Risk into Development Decision-Making (Martin Okata, Senior Climate and Disaster Risk Specialist, Climate Change and Sustainable Development Department, Asia Development Bank)**
  - ADB is a multilateral development bank where 50 of 69 members are Asia-Pacific economies. Its mission includes inclusive/resilient growth. Climate action is a key focus; in 2023, 79% of ADB's projects were climate-related. ADB committed to investing USD100 billion in climate finance from 2019 to 2030.

- ADB operates a climate risk assessment system using AI and big data. It defines risk as the impact on achieving project objectives, not just financial loss.
- The three main uncertainty factors in climate models are scenario uncertainty, model uncertainty, and internal climate variability. Distorting these risks leading to misguided decisions. ADB promotes transparent communication of uncertainty and provides adaptation alternatives through scenario comparison/analysis to strengthen customized support for member economies.

Panel Discussion. Charting APEC's path for Climate Change Adaptation: Integration and Collaboration

The panel discussion was chaired by Dr. Jong Ahn Chun, Head of Climate Change Analysis Department of APCC. He introduced a diverse panelist, including experts from the public, academia, private and regional organizations. The panel explored strategies to enhance cooperation among APEC member economies to better respond to climate change. Experience on partnerships between the private sector, government, academia, and regional organization were shared and the role of regional climate center like APCC in supporting adaptation efforts were discussed; ultimately providing insight into developing relevant scientific and socio-economic policy recommendation. The discussion also addressed barriers to integrate and bridge the gap between climate information users and producers. By sharing experience and solutions, the discussion promoted a more collaborative approach to addressing the region's climate challenges. Diverse views were shared and some recommendations were made as follows.

[Regional Intergation and Cooperation]
The panelists emphasized the need for an integrated approach that goes beyond individual economy or sectoral efforts to effectively adapt to climate change.

- **Overcoming fragmentation**: Current climate adaptation efforts are fragmented across different channels and initiatives, making integration essential to generate synergistic effects.
- **Institutionalization and Policy Integration:** Sefanaia Nawadra, Director-General of SPREP, suggested that climate change response should be institutionalized as a standing agenda within APEC rather than being treated as ad-hoc projects. It should also align with regional strategies like the "2050 Strategy for the Blue Pacific Continent".
- **Integration of Mitigation and Adaptation:** Prof. Mark Howden highlighted that adaptation and mitigation should not be viewed separately; instead, they must be integrated to maximize synergies and manage trade-offs.

[Science & Data Infrastructure]
To support effective climate adaptation, the need for high-resolution scientific data and platforms for sharing this data was strongly advocated.

- **High-Resolution Modeling:** Prof. June-Yi Lee pointed out that current global climate models (100km resolution) are limited in predicting local weather

events. She emphasized the necessity of high-resolution climate modeling (down to 1km) for establishing adaptation measures at the regional scales.

- **Data Sharing Hub:** To address the issue of fragmented or inaccessible climate data due to security concerns, the establishment of an APEC-wide "Climate Data Hub" or "Knowledge Network" was proposed to facilitate the sharing of high-quality data.
- **Investment in Monitoring Systems**: It was noted that improving model accuracy requires not only modeling efforts but also sustained investment in ocean and atmospheric monitoring systems.

[Bridging Science, Policy, and Society]

The discussion highlighted the importance of translating scientific information into forms that are easily understandable for policymakers and the general public.

- **Role of Boundary Organizations**: Prof. Mark Howden emphasized that institutions like APCC should act as "boundary organizations" that go beyond producing scientific data to translating and delivering it as practical knowledge usable by policymakers.
- **Effective Journalism**: Journalist Sang Wook Park mentioned that to reduce public climate fatigue, reporting should focus on solutions rather than fear. He stressed the importance of "storytelling," which involves converting technical terms into plain language and using visualizations.
- **Two-Way Communication**: Scientific information should not be delivered unilaterally; it needs to be "co-designed" through continuous dialogue with decision-makers to gain trust and be reflected in actual policies.

[Diverse Knowledge Systems & Inclusivity]

Incorporating traditional knowledge and ensuring the participating of diverse groups were identified as crucial for practical adaptation.

- **Utilization of Traditional Knowledge:** Sefanaia Nawadra emphasized the need to combine the traditional knowledge accumulated by indigenous people over thousands of years with science in climate adaptation strategies.
- **Inclusive Approach:** Adaptation policies require an inclusive approach that reflects the voices of various vulnerable groups, including women, youth, and people with disabilities.

[Future Role of APEC & APCC]

Finally, specific expectations and directions for the future roles of APEC and APCC were suggested.

- **Knowledge Broker and Hub:** APCC should strengthen its role as a "knowledge broker" and "regional hub" that connects science and policy and reduces knowledge gaps among member economies.
- **Capacity Building and South-South Cooperation:** There is a need to promote capacity-building programs to help developing economies utilize climate information and to foster South-South cooperation for sharing experiences among member economies.

- **Transboundary Cooperation:** Since the climate crisis transcends borders, it is necessary to strengthen transboundary research networks and collective response systems at the APEC level.

Symposium Outcomes

This project had two targeted outcomes and they have been achieved, as evidenced by participant feedback from the post-event survey. Respondents noted that the project set the clear objectives and successfully met its intended goals.

1. Increased capacity of APEC member economies for effective climate change adaptation

This project developed a pre-reading brief, detailing the best practices/cases from APEC member economies. Five case studies from China; Indonesia; Thailand; and Viet Nam were compiled. This brief effectively transformed individual member economy's experiences into shared regional assets, allowing member economies to learn from diverse approaches to common climate challenges.

- (DiDi Global Inc./China) Scaling Resilient Mobility Across APEC economies
- (Research and Innovation Agency/Indonesia) Strengthening Coastal Resilience through Integrated Climate Services and Ecosystem-Based Adaptation in Indonesia: Lessons from Indramayu
- (Research and Innovation Agency/Indonesia) Best Practices of APEC economies in Climate Change Adaptation Utilizing Climate Services in Indonesia
- (Viet Nam Academy of Science and Technology/Viet Nam) High-Resolution Downscaling of CMIP6 Climate Projections - A Viet Nam Case Study
- (Office of Higher Education Science Research and Innovation Policy Council, Thailand) Best Practices of APEC economies in Climate Change Adaptation Utilizing Climate Services in Thailand

The pre-reading brief provided essential background information on current status of APEC member economies in climate change impacts and adaptation strategies, ensuring participants arrive with a baseline understanding necessary for effective discussion during the event. This helped situate participants within the current climate landscape, highlighting key challenges and sectoral interrelations, which prepared them to engage in meaningful dialogue and problem-solving. As a well-informed participant is more likely to contribute effectively to discussions, event, and collaborative efforts, this brief contributed to fostering a richer learning environment for all attendees. In addition to the knowledge-sharing and discussion on site, this brief paper helped member economies equip them with a comprehensive understanding of the diverse sectoral impacts of climate change, thereby improving their capacity for effective climate change adaptation. Member economies were able to have a deeper understanding of how climate change affects various sectors, leading to more informed decision-making.

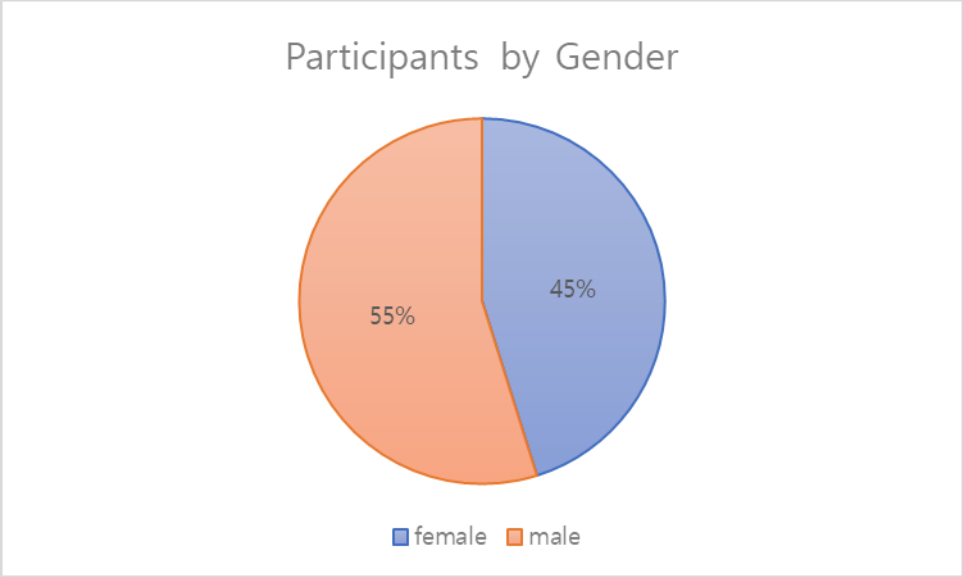
One of the core indicators of the symposium's success is the measurable increase in participants' understanding of the subject matter. The survey compared the self-assessed level of knowledge prior to and after the event. While 38.8% of respondents rated their levels of understanding on the topic to be 'very high' or 'high', 80.6% responded that they have improved the level and skills in the topic after the event. This substantial increase demonstrates the symposium's effectiveness in capacity building. It confirms that the technical sessions and discussions successfully

bridged the knowledge gap, providing attendees with a deeper, more practical understanding of complex climate challenges.

2. Strengthened partnerships among APEC member economies to share best practices and resources for climate change adpatation

This event served as a pivotal platform for solidifying partnerships among APEC member economies, directly addressing the fragmentation of climate adaptation efforts in the region. By convening over 180 participants, including scientist, policymakers, and international representatives from 26 member economies, the event facilitated a robust exchange of best practices, current efforts in climate attribution research, sectoral impacts of climate change, and the way forward. Furthermore, the panel discussions reinforced these partnerships by calling for the institutionalization of climate change as a standing agenda within APEC and promoting diverse forms of cooperation. By reaffirming APCC's role as a boundary organization that translate complex science into actionable policy resources for sectors such as agriculture, health, and energy, the event successfully established a renewed framework for collaborative, cross-border climate resilience, ensuring that member economies can jointly nagivate the complexities of the climate crisis.

To support APEC's effort to integrate women into economic activities, the project team prioritized gender balance among speakers and participants, actively encouraging female participation from developing economies. This effort resulted in 84 female and 102 male participants.



To facilitate networking and partnership among relevant personnel within APEC and beyond, the event sought out participants actively and attended by total 26 economies, including 18 APEC member economies and 8 non-member economies. The workshop drew a total of 186 attendees from a range of public sector stakeholders including disaster risk management, meteorological and hydrological agencies, academia, private sector and experts from international organizations and they shared experiences and knowledge for climate change adaptation.

Economy	Participants	Economy	Participants
Australia	2	Chinese Taipei	4
Canada	1	US	1
Chile	2	Thailand	3
People's Republic of China	1	Viet Nam	2
Hong Kong, China	1	Fiji	1
Indonesia	3	France	1
Japan	6	Germany	3
Republic of Korea	137	Italy	1
Malaysia	1	India	2
Papua New Guinea	1	Palau	2
Peru	1	Tuvalu	1
The Philippines	3	UK	3
Russia	2		
Total Participants	**186**		

Participants Feedback

A post-event survey was conducted to evaluate the satisfaction levels and overall effectiveness of this project. The survey aimed to determine whether the objectives were met and whether the information shared prompted any changes following event. It included questions comparing participant's knowledge levels before and after attending the symposium, as well as assessing their satisfaction with the organization and contents of the event. Additionally, the survey explored mid-term effects of the project. Gender aspects of the symposium were also highlighted through gender-disaggregated data. Allowing for an analysis of participation rates among both invited panelists and attendees.
A total 31 participants responded to the survey. 3-point scale was used to show the levels of satisfaction, 'strongly agree(3),' 'agree(2),' and 'disagree(1)'.

Evaluation criteria	Average Score
1. The objectives of the training were clearly defined	2.84
2. The project achieved its intended objectives	2.74
3. The agenda items and topics covered were relevant	2.81
4. The content was well organized and easy to follow	2.77
5. Gender issues were sufficiently addressed during implementation	2.26
6. The trainers/experts/facilitators were well prepared and knowledgeable about the topic	2.84
7. The materials distributed were useful	2.84
8. The time allotted for the event was sufficient	2.68

Participants expressed high satisfaction across most operational and programmatic aspect, with an average score of 2.78 out of 3.0. In terms of program and contents, clear definition of objective is the highest-rated category with a score of 2.84, indicating that the symposium's goals were well-communicated. Professionalism of speakers also scored 2.82, reflecting high regard for the expertise of the keynote and session speakers. Relevance of topics scored 2.81, confirming that the themes such as attribution, adaptation, and cooperation) were timely and appropriate. Usefulness of materials scored 2.82, showing that the distributed materials were helpful to participants. From operational aspects, overall organization scored 2.82, suggesting smooth logistics and preparation. Duration of the meeting scored 2.77, indicating the length of the event was generally appropriate. Respondents rated 2.74 for goal achievement, meaning participants felt the event met its intended outcomes. Gender mainstreaming scored 2.26, which was relatively lower than other categories, suggesting a need for more active promotion or visibility of gender-related considerations in the future event.

Furthermore, participants praised the networking opportunities, noting that the event provided a valuable platform to connect with experts from diverse sectors. The professionalism and expertise of the speakers were frequently highlighted as major strength of the event. The relevance of the topics to current climate challenges was highly appreciated. On the other hand, there was a strong demand for more interactive formats, such as focus group discussions or workshops, rather than just listening to presentations. Some participants suggested extending the duration of the symposium to allow for deeper discussions. They also requested that APCC take a leading role in promoting climate data sharing and workshops to bridge the gap between member economies.

In conclusion, the survey results indicate that the APEC Climate Symposium 2025 was highly successful in delivering relevant content and facilitating expert exchange. While satisfaction with the program and operations was high, future iterations could benefit from incorporating more interactive elements and further emphasizing gender mainstreaming efforts to ensure a more inclusive and engaging experience from the event.

[Annex I: Program]

7 August 2025			
Time	**Activity**	**Presentation**	**Speaker**
9:00-9:30	**Registration / Networking / Morning Coffee**		
9:30-10:45	**Opening Session**		
9:30-9:40	**Opening Remarks**		Acting Executive Director, APEC Climate Center
9:40-9:50	**Opening Performance**		
9:50-10:00	**Welcome Remarks**		Dong-eon Jang, Administrator, Korea Meteorological Administration
			Junseong Lee, Vice President, Busan Metropolitan City
10:00-10:20	**Congratulatory Remarks**		Eduardo Pedrosa, Executive Director, APEC Secretariat
			Kyunghoon Bae, Minister of Science and ICT
			Hoyoung An, Korean Assembly
			Heejung Kim, Korean Assembly
			Heosung Lee, Formal Chair of IPCC
10:20-10:40	**APCC 20th year Anniversary Celebration** **· 20th year anniversary video** **· 20th year ceremonial performance** **· Contest Award Ceremony for Shorts**		
10:40-10:45	**Group Photo**		
10:45-11:00	Break		
11:00-12:00	**[Keynote Session]** **Understanding Climate Change and its Challenges: Scientific and Societal perspectives**		
11:00-11:30	Addressing Climate Knowledge Gaps: IPCC's Plans for the Current Decade		Jim Skea Chair, Intergovernmental Panel on Climate Change
11:30-12:00	Next Generation Earth System Model Projections		Axel Timmermann Director, IBS Center for Climate Physics
12:00-14:00	***Welcome Luncheon***		

14:00- 17:00	**[Session I]** ***Climate Challenge: Attribution and Prediction Efforts, Achievements, and Directions*** *(Chaired by Prof. Seung-Ki Min)*	
14:00- 14:25	The Need to Account for Model Error for Prediction, Projection, and Attribution	Doug Smith, Research Fellow, Hadley Center, Met Office, UK
14:25- 14:50	The Tropical Pacific as Key to Global Climate Variability and Change	Yu Kosaka, Assistant Professor, Research Center for Advanced Science and Technology (RCAST), University of Tokyo
14:50- 15:15	Towards Attribution of Extreme Rainfall Events Using Convection-Permitting Simulations	Seung-Ki Min Professor, Division of Environmental Science & Engineering, POSTECH
15:15- 15:40	*Coffee Break*	
15:40- 16:05	Advancements in Diverse Event Attribution Techniques and Their Engagement with Society	Yukiko Imada, Assistant Professor, Division of Climate System Research, University of Tokyo
16:05- 16:30	Physical Climate Storylines as a Way of Bridging between attribution and Prediction	Ted Shepherd Grantham Professor of Climate Science, Department of Meteorology, University of Reading, UK
16:30- 17:00	Wrap-up/Q&A	
17:10- 18:30	***Dinner***	
August 8th, 2025		
9:30-12:30	**[Session II]** **Climate Challenge: Adaptation and Cooperation for Strengthening Climate Resilience *(Chaired by Prof. Hyungjun Kim)***	
9:30-9:55	Health in All Policies (HiAP) for Climate Action	Ho Kim, Professor, Graduate School of Public Health, SNU
9:55-10:20	Global Pre-harvesting Crop Yield Forecasting for Climate-resilient Agri-food Systems	Toshichika Iizumi, Principal Scientist, Institute for Agro-Environmental Sciences, Agriculture and Food Research Organization, Japan
10:20- 10:45	Navigating the Climate Crisis: Understanding Coupled Earth-Human Systems	Hyungjun Kim, Professor, Moon Soul Graduate School of Future Strategy, KAIST
10:45-	*Coffee Break*	

11:10		
11:10- 11:35	From Projection to Action: Integrating Climate Risk into Development Decision-Making	Martin Okata, Senior Climate and Disaster Risk Specialist, Climate Change and Sustainable Development Department, Asia Development Bank (ADB)
11:35- 12:00	Wrap-up/Q&A	
12:00- 14:00	***Lunch***	
14:00- 16:00	**[Panel Discussion]** **Charting APEC's path for Climate Change Adaptation: Integration and Collaboration *(Chaired by Dr. Jong Ahn Chun)***	
	<u>Panelists</u> • Sefanaia Nawadra, Director-General, SPREP • Mark Howden, Emeritus Professor, Centre for the Public Awareness of Science, Australian University (ANU) • June-Yi Lee, Professor, Research Center for Climate Science, Pusan University (PNU), Korea • Sang Wook Park, Journalist, Policy News, JTBC	
16:00- 16:20	*Coffee Break*	
16:20- 17:00	APEC knowledge-sharing	
August 9th, 2025		
9:30-12:00	All about the APEC Climate Center (APCC) / Field Visit	
12:00- 14:00	***Lunch***	
14:00- 17:00	Field visit	

[Annex II: Pre-reading brief]

Five case studies, best practices/cases from China, Indonesia, Thailand, and Viet Nam were compiled for the pre-reading brief.

1. (DiDi Global Inc./China) Scaling Resilient Mobility Across APEC economies
2. (Research and Innovation Agency/Indonesia) Strengthening Coastal Resilience through Integrated Climate Services and Ecosystem-Based Adaptation in Indonesia: Lessons from Indramayu
3. (Research and Innovation Agency/Indonesia) Best Practices of APEC economies in Climate Change Adaptation Utilizing Climate Services in Indonesia
4. (Viet Nam Academy of Science and Technology/Viet Nam) High-Resolution Downscaling of CMIP6 Climate Projections - A Viet Nam Case Study
5. (Office of Higher Education Science Research and Innovation Policy Council, Thailand) Best Practices of APEC economies in Climate Change Adaptation Utilizing Climate Services in Thailand

The compiled pre-reading brief can be found below.

APCS 2025_Pre-reading E